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ABSTRACT

The first half of this article examines the function of various types of language laboratories. They are classified principally as: (1) audio-passive, (2) audio-active, and (3) audio-evaluative laboratories. A chart illustrating the major types of technical installations and their components further classifies laboratories in terms of whether they are broadcast, library, or mixed type. The educational functions of the laboratories are discussed. The second part of the paper explores the potential of the laboratory as a teaching machine. Individualized instruction is seen as the basis for the new pedagogy. The author elaborates on five areas in which he feels the language laboratory can be more effective than a single professor. They include: (1) oral training in the second language, (2) knowledge of the student's native tongue, (3) knowledge of second language, (4) culture study, and (5) research. (RL)

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"WHICH LANGUAGE LAB TO DO WHAT?"

by Guy Plastre, m.a.

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This text is based on two papers read by Guy Plastre at the Fifteenth Conference of the AEFO, held in Ottawa, Ontario, on the 20th of January 68, and at the Annual Meeting of the Nova Scotia Teachers Union Conference, held in Truro, N.S., on the 18th of October 68.

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Individual tape recorders have their place in every classroom of our schools: no doubt about it. But how about the language lab?

It is customary to start a discussion by defining the terms used. Yet, I won't undertake here to define what a language laboratory is: the technical complex covered by this word is too diversified a reality to let itself be exhausted by a definition that will describe the real nature of this modern tool of second language learning. Let us say it is a linguistic workshop which our pupils are called to work in with more or less individual freedom and initiative, workshop which, by this very fact, is the opposite of the classroom where the teacher plays the key role by presenting and explaining the facts of language to his rather passive students.

Whatever may be the varying techniques of all sorts of installations, these installations have the right to be called language laboratories if they really permit the students to acquire a practical mastery of the spoken language, and in that sense a single tape recorder is a type of a language lab.

This device is most valuable for secondary and post-secondary student learning. It has far-reaching consequences because it increases the instructional power of the teacher, enables him to adjust the programme to meet individual requirements. At the same time, it gives him freedom to work with single students or groups while others keep working and permits him to select and arrange in custom-planned sequences pre-recorded lessons for out-of-class practice. Current experimentation and reports have induced Prof. Finocchiaro to believe that the language lab can be effective too in the elementary school; and she assigned it the following objectives: to develop listening and speaking ability; to change the pace of the lesson; to reinforce learning, to motivate and stimulate, to simulate reality, to breathe more life into our lessons...

Personally, I have my doubts. The standard lab - or what has become the standard set-up - is not appropriate for the elementary school. It is too complicated a device and it demands too much of the children, unless you are using magnetic disc recorders instead of tape recorders. If there should be a lab in an elementary school, a simple audio-active group-practive lab seems adequate to me. Rather than a permanent sophisticated installation, I would prefer the mobile or portable lab or might even favor the newest local set up sold much cheaper than the so-called "complete lab" under the general name of "electronic classroom". Personally, I do not believe a language lab is essential in an elementary school second language programme. Anyway, not until

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well-qualified and numerous enough teachers are available for real team teaching. To use a lab is not a sinecure. And it is as dangerous as it is technically complex and didactically efficacious. Give a shovel to an inexperienced man, he will probably do no harm at all digging holes; but give him one of these powerful mechanical shovels or a bulldozer and then let him fool around with it... You will see the disaster! The language lab is not necessary in the elementary school, neither, for that matter, desirable at the moment. But give the teachers tape recorders, record players and transcription tables, filmstrip-slide projectors, viewers, along with the basic "software" and supplementary audio-visual material: they will have all they need at this stage to do an acceptable job. They will have all the essential components of a real electronic learning center - minus the glamour - and all the objectives assigned by Dr. Finocchiaro to the language lab would be fulfilled right in the classroom. Few elementary teachers would really need more than that. But no one could do with less!

At the high school level, the situation is different, because the data of the problem are different. Students have no longer the same attitude towards language in general, towards a second language in particular. Their verbal behavior is different. They have developed inhibition, some reluctance, even aggressiveness...

Secondary teachers need a lab to secure their students with enough contact with the language, enough practice and oral training in it. The lab is needed, too, to administer objective testing... But which type of installation do high school teachers really need? That is the question!

If we consider the possible operational moods, we are led to distinguish three main types of laboratories: 1. the Audio Passive Laboratory, 2. the Audio Active Laboratory, 3. the Audio Evaluative Laboratory. If we would rather consider the possible working rhythms with one or another electro-mechanical complex, we can distinguish four principal types: 1. Group Laboratory, 2. Multi-Channel Laboratory, 3. Dial Lab, 4. Individual Lab, types 1, 2 and 3 being of the Broadcast Type while type 4 is of the Library Type. All these give us a classification of the different possible installations in twelve major typological categories, and forces us to admit that our concept of a linguistic centre is, in fact, much narrower than that. Speaking today with teachers or administrators about language laboratories means referring ordinarily to the recording lab alone, either the library type lab or the multi-channel broadcast type.

LANGUAGE LAB ESSENTIAL COMPONENTS

Console

Headphones	1
Microphone	2
Master Magnetic Player	3
Phonograph	4
Amplifier	5
Tape Recorder	6
Programme distribution (Switching System)	7
Monitor and Intercom	8

Fittings

Electric Wiring	9
Electronic Wiring	10
Sound-Proofing	11
Air-Conditioning	12

Student Position

Sound Proof Booth	13
Headphones	14
Microphone	15
Amplifier	16
Magnetic Player	17
Tape Recorder	18
Programme Selection Control	19
Call Button	20

Varia

Portable Recording Machine	21
Projector	22
Screen	23
Loud Speakers	24
Duplicator	25
Dubbing Accessories	26
Bulk Eraser	27
Radio Receiver	28
Splicer and Splicing Tape	29

Language Laboratories:

Major Types of Technical Installations
and their Components *

	Broadcast Type			Library Type	Mixed Type
	Group Lab	Multi-Channel Lab (a)	Dial Lab (b)	Individual Lab	Complete Lab (f)
Audio-passive Laboratory (c)	A: 2,3,4,5 9,10 14 (or 24) 22,23,28, 29	D: As Type A but 3 and 5x? plus 17,19,26	G: As type D but 3 and 5x???	J: 13,14,16,17 (22,23) 9,11, (12) 25,26	
Audio-active Laboratory (d)	B: As Type A Plus 1,(6),8 10,(11) (13),15,16, (20) 21	E: As types B and D together	H: As Types E and G together, but 11,12 and 13 obligatory	K: As Type J plus 15 (8,20)	
Audio-evaluative Laboratory (e)	C: As Type B plus 11,12 13,18 27	F: As Types C and E together	I: As Types F and H together	L: As Type K plus 18 (or 21) 27	M: As Types L and F (or I) plus all available "gadgets"

(a) Also called: Selective Group Lab, Multi-Group Study System, Multiple Programming Lab, Semi-Individual Lab.

(b) Also called: Dial Retrieval System, Random Access Lab. (Technically, this system is in the line of progression of the Broadcast Types: A → D but, functionnaly, it is already a Library Type Lab.)

(c) Also called:Listening Lab,

(d) Also called: Practice Lab, Analyser, Activated Mike, Listen-Speak Lab.

(e) Also called: Recording Lab, Audio-Active-Compare System, Listen-Speak-Record Lab.

(f) Also Called: Full Lab.

*The intercommunication system is not, as such, part of the basic components of a language lab; monitoring and intercommunication lines are, indeed, very useful features that could (should?) be added to any type of installations, except types A, D, G, and J.

In French, we propose the following standardization of terminology:

Type A: laboratoire audio-passif collectif
D: laboratoire audio-passif semi-autonome
G: banque sonore audio-passive
J: laboratoire d'écoute individuelle
B: laboratoire audio-actif collectif
E: laboratoire audio-actif semi-autonome
H: banque sonore audio-active
K: laboratoire de pratique individuelle
C: laboratoire audio-critique collectif
F: laboratoire audio-critique semi-autonome
I: banque sonore audio-critique
L: laboratoire d'enregistrement individuel
M: laboratoire composite

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Should I emphasize that we are in the middle of a technological evolution? Each month, new electro-mechanical applications enable us to realize things that were impossible or unthinkable the month before. Even though educational research has attained, in the realm of scholastic technology, a certain number of certitudes that permit a stable groundwork in the use of instruments in language teaching, we must humbly admit that twenty years after the installation of the first language laboratory, the pedagogy of this teaching tool is still to be invented. How can we conceive of stopping with one type of installation alone since everything indicates rather a continual readjustment of electrotechnical applications to the school situation and to the always changing philosophy of schooling in a modern Canada! No one has yet proved that one type of lab is superior to another.

Everyone agrees that the two main advantages of the language laboratory are, first, that this tool gets the student used to hearing the spoken language, clearly, through perfect recordings, and second that it helps him to understand different types of voices and pronunciations. The Audio-Passive Group Laboratory is the most economical way in the world of doing this. But we like to add to these unchallenged (but not unchallengeable) advantages the fact that the isolated student in his booth is more at ease when working, and that he can do repeatedly the sentences and problems that cause him personal difficulty, without holding back or being held back by his classmates. He can, as he wishes, concentrate on such and such passage, just as, in a library, he can consult and reconsult according to his needs, a certain paragraph in a certain chapter of a certain book. In short, in a language laboratory, the student works at his own pace. It is the key word in all the arguments put forth by the believers in the individual lab work: allow the student to work at his own pace.

In his March 1962 address to the Indiana Language Laboratory Conference, Professor Valdman made of it the keystone of laboratory teaching: breaking the lockstep by which all students in a class are tied to the same rate of progress. That's the grand idea which forms the basis of the new pedagogy.

To the best of our knowledge, the only ones who have risen up against this claim are Professors Fernand Marty, in the United States, and Julien Dakin, in the United Kingdom. "Should students work on their own and at their own pace?" Let's be frank: we really don't know! No experimental research has ever been scientifically done to prove beyond reasonable doubt that, in a language laboratory situation, individual work is superior to group work. On the contrary, our colleague from Hollins College assured us that his students who work in a team of two or three around the same machine, in the same booth, on the same program, have more success than all his other students. This has already been hinted at in August 1965. A report from Professor Austwick appeared in New Education claiming to have had more success with students working in pairs than with stu-

dents working alone. We have, undoubtedly, forgotten that aside from lecture courses and tutoring there is such a thing as mutual teaching and mutual learning. Since speaking a language means communicating, and communicating is a social act, we must admit that we complicate our students' lives in the second language by forcing them to communicate with a machine without a soul. He who talks to himself is laughed at because it is not normal to talk to oneself. Dialoging with a parrot (What are our machines if not electronic parrots?) is not communicating.

Besides this, when we broadcast to our students programs with pre-established pauses, don't we somewhat limit if not destroy that very individual freedom we wish to offer to each of them? How can a student work at his own pace when he is in a straight jacket of audio blanks identical for everybody? For the bright student, these silences are always too long and slow down his rhythm of work. For the slow student, these pauses are always too short and constitute a cause of deep frustration. Ordinarily, spacing is aimed at the average student. The larger our classes, the more the average falls off. To be honest, we have then to admit that average is close to signifying mediocre. In language, more than anywhere else, the democratizing and the aiming of our teaching at the masses has resulted in a lowering of language learning. Why deceive ourselves? We can, undoubtedly, teach 45 students to count at the same time, but we cannot make 50, 40 or even 30 people talk properly at the same time. Therefore, the laboratory is like a fascinating mirage of efficiency. We are tempted to believe, therefore, that by isolating each of our students into an individual booth we would multiply the teacher by 30 or 40 and insure, just like that, a respect (almost a fetish) for individual work in language learning.

Is individual work really preferable in a second language? The question is still pending. The answers, I suspect, would be diversified. Some tasks are better done individually; others require a team work of two or three. A certain training will put up with group work and several automatisms won't be loath to collective repeating. Only one fact is irrefutable: the mastery of a second language isn't reached until our students get to the point where they can converse in a group. The language lab can do a part but not all of this. Why ask the lab to do the impossible or barely probable and neglect what it can do? We are indeed the most unreasoning stategists: immediately we put in our armory a weapon which we have taken very little time to learn how to handle or discover its specific capabilities. The language laboratory is a specific, it's not a cure-all.

It's not only on this point that our lucidity can be questioned. Another debate persists among the teachers who use the language lab: is it necessary for the students to record their own voice? Is the Audio Evaluative Lab, the one found in most of our schools, the only useful type of installation? Many educationalists claim it is absolutely necessary for the students to record their responses and then listen to themselves to evaluate their performances in the second language and recognize their success or failure.

In the beginning, the students have indeed a great time listening to themselves, but, little by little, this pleasure fades and even gives way to a deep dissatisfaction as well as a feeling of frustration which rapidly kills the most optimistic motivations. What can be more deceiving for a student who has been trying for ten minutes to pronounce a certain sound than to hear himself stammering?... As if he needed to hear himself again to measure the failure of his repeated efforts. Nothing is more dangerous that to force a student to listen to his mistakes. Isn't it the purpose of a laboratory to present to a student only perfect linguistic models for imitation? If the charm of listening to oneself doesn't last very long; if there is a risk of fixing wrong accoustical images in our students' ears; if it were shown that the work in the student's booth with a binaural unit, as conceived by the original language laboratory, at St-Germain-en-Laye, near Paris (SHAPE), is very often only a multiplication of time consumed, then it would be necessary to reject this type of installation. This is what Middleburry College in the United States has understood, when they installed, under the name of "Practice Rooms", work booths where we don't find machines with two tracks, one for the recording of and one for the subsequent listening to students' voices, but only one playback unit. Prof. Watkins, Director of the Language Laboratories of this institution, is convinced that such recordings have proven to be of very little value at the elementary level because the students are not capable of audio self-criticizing. The question is to find out just how far the elementary level goes in a second language.

Prof. Marty's attitude is the same, as concretized in his "new-look" laboratory where each position is equipped with two machines, a playback deck as reading unit (considered to be the main and most essential unit) and a tape loop recorder as optional recording unit. This was also, in short, the philosophy of the old Synchrotone with its double magnetic disks.

In an audio active type laboratory, when the student talks, he hears himself through earphones as well as by bone conduction. This can be called <u>subjective audition</u> as opposed to <u>objective audition</u> which is experienced when one hears someone else speaking. When we listen to an audio source which is outside of ourselves, the sensation we receive is a simple one accountable to the accoustic sensation produced on the eardrum by mechanical waves in the atmosphere. When we listen

to our own voice, we have a composite sensation: accoustic stimuli as well as bone conduction vibrations. How does this difference in sensation affect the perception? This is what we would like to learn from psychologists. It seems that a phenomenon of conditioning leads us little by little to recognize as equivalent different physical sensations. Well, half of the problem of the command of a second sound system resides directly in this ear reconditioning of the student to get him accustomed to recognizing the new sounds of the language he is studying whether or not these sounds are common to both languages, his mother tongue and the second language. But can we validly compare the subjective audition of a sound with the objective audition of the same sound? And, when a student compares what he says at the very moment he says it, can he really evaluate the degree of correction of what he says compared to the model proposed an instant earlier (repetition drill) or a moment later (anticipation drill)? This is after all a problem which is related to capacity of attention. If part of a student's mind is busy thinking out the message that he has to express, if another part of his mind is involved with coding this message into words, forms, and structures, if still another part is busy giving commands to the organs of speech to articulate this message, can a student, reasonably, concentrate on the complex act of evaluation? This task of critical self-evaluation, is it not beyond the students' capacity? By squeezing together production and comparison, are we not asking our students a psychological task beyond their attention span? It is surely easier to separate these two phases of the learning process. It is rather tempting to ask a student, firstly, to produce or reproduce a sentence without thinking of the critical part of it and, secondly, to ask him to evaluate his performance without worrying about production. However, it is here that the educationalists protest and say we are forcing students to listen to their own mistakes. Psychologists of the Bell Telephone Laboratory uphold for their part, ready proof, that without simultaneous evaluation by the ear of the speaker himself of every word uttered by him, without immediate self-criticism and readjustments which result from it in the very moment of speaking, the discourse is practically impossible. No speech without hearing!

Experience has taught us that, unless they have had a precise re-education of their accoustical acuity, the majority of subjects cannot discriminate simular or analogous sounds. For example, let's recall the typical inability of Chinese waiters to correctly pronounce the expression fried rice in which, invariably, they substitute the lateral l in place of the anglo-canadian r. This should make us think. If foreigners who have lived for years in a country have never been able to hear a certain sound, and as a result have never reached the point of imitating that sound, how can we believe that our students, whose ears are not yet conditioned to the new phonetic system, can truly, objectively compare their pronunciation to the model pronunciation recorded

on the tape? Another example: how many French speaking students have proudly listened to their last try at the pronunciation of the sentence "The theater is on that side of the street" saying to us "This time I've got it", while we still hear a clear French dental t every time he thought he had produced the English th.

To finish up a debate that is of no small importance, we will give here our personal feeling. Weighing the arguments of Marty, who is against, as well as those of Lorge and Locke, who are for, we have come to a sort of compromise which 12 years of lab experience seem to justify a posteriori.

Our personal opinion is that it is not useful to have a student record his own responses as long as he is aware that he is still stammering. Only when he is sure of himself, when he is just about certain to correctly pronounce a specific sentence, or to resolve a certain linguistic problem, should we permit him to record his performance. The utility for a student to record himself only begins when he feels he is capable of speaking correctly. It is only at this time that the value of audio-evaluation by delayed audition can succeed. This value is perhaps more a re-education of his accoustic acuity than a real act of self-criticism. To proceed otherwise is not only useless but dangerous, even anti-pedagogical.

Believe us when we say this isolated evaluative effort has to be worth the trouble in the eyes of the student himself. Indeed, there is no point in asking him, for example, to record his transformation of the sentence "he sings" to the negative "he does not sing" simply to make him realize that he did or did not use the auxiliary "to do". Any student of average intelligence and ordinary auditive acuity would immediately realize, once the correction is given, if he has made a mistake by saying "he sings not" or "he not sings". It seems to us neither necessary nor useful to have the student record his response when the problem is one of morphology or syntax. It is more important, in these instances, to immediately propose to the student another analogous problem, then another, then another, then still another, to finally lead him to develop the automatic reflex we want to implant in him, for example: the introduction of the auxiliary in the English negative sentence. An error, here, is too obvious for him not to realize his mistake even though he is struggling with problems of production. If it were a question of a more subtle nature, for example, the addition of the morpheme /Z/ to the third person singular of the present indicative ("he sings" contrasted with the plural "they sing" or the first person singular "I sing"), then perhaps a delayed exercise would be justified. Yet this

is not proven, because nothing assures us that the student would pay more attention to detect this mistake after he has made it than when he was at the very moment of speaking. In such cases it is imperative that such drills - phonetic or phonemic drills - be done with a monitor at the master console. At the same time, it is necessary to train the student to recognize particular points by calling to his attention the specific audio signal he must be looking for, either by a whispered remark in his native tongue or by asking him questions of this type: "What is the last sound you have just pronounced? Did you hear the sound (z) at the end of the two words - the one you pronounced and the one pronounced by the master voice?," and so on... There is little value in audio-evaluation, even though delayed, if it is not carefully prepared by systematic exercises in auditive acuity, sound discrimination and audio memorization. This is what we call the re-educational function of the lab.

For this delayed listening to be valuable we have, for some time now, been against the practice of making up drills consisting of 20 or 30 problem-sentences before asking the student to listen to himself and compare what he has just done to the models provided on the tape. Together with our colleagues at Laval, up until very recently, we were of the opinion that an immediate playback was necessary, hence our efforts during the past few years to put together a unit which would permit this instantaneous playback right after the production of the sentence. This is the characteristic regarded as fundamental by a lab manufacturer who put on the market a teacher console with a recording drum for immediate playback of the students' responses. However, confronted by the incapacity of auto-criticism on the part of most of our students, we were led to adopt a slightly different position. Everybody knows from personal experience that when one has composed a text, if he rereads it immediately he usually does not see the mistakes that have slipped in and even finds the text rather good. This impression usually changes after a later reading. Several or even only a few days later, one would see his mistakes and pick out all of them more easily; a few months or a few years later, the same text would seem quite annoying to the author himself. This is because the mind is still too much engaged in the creative process to stop and evaluate objectively the finished product. What is the perfect distance for an objective self-evaluation? Once again we are awaiting the results of the research done by our colleagues in experimental psychology. In the meantime, we favour the following working hypothesis: this delayed playback for audio-evaluation should be done after a minimum grouping of problems, say after three or four solutions; then, after the student has taken a few moments to readjust, so to speak, his organs of speech according to the more or less encouraging results of his first efforts, he gives into a new grouping of strictly audio-active work. At the end of this new practice, he is then given a last grouping to record for delayed evaluation, after a maximum of three or four minutes of work. It might even be a good idea, before this new audio-evaluative recording, to insert a drill practicing a

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different point. This permits the student to relax a little in relation to the first point before going on to the new recording exercise which is a test of his acquired knowledge.

In any case, where there is the recording of the student's voice in the lab, we believe it is important that the equipment should allow the simultaneous re-education of the student's ear. This is not the case presently with the machines on the market, except for very special (and very expensive) machines like the Suvag-Lingua of Guberina and the Aurelle of Tomatis. However, these are not yet standard pieces of lab equipment. Today, in the opinion of the manufacturers themselves, the recorders at the student position would assure a flat response.

The principal aim of the manufacturers is indeed to put on the market equipment that could reproduce all the sounds of the sound spectrum, from bass to treble, in their exact proportions. A sound system will thus be considered of a high fidelity if it can reproduce, with a variation of plus or minus one db, all signals received as high as 50,000 cycles a second. This aptitude of sound system is what we call "flat frequency response". Of course, this characteristic of sound equipment was developed with respect to musical recording and reproduction. As far as we know it has not yet been studied with regard to voice recordings. The problem is thus fundamentally one of the desirable fidelity of the equipment destined for language teaching.

To my knowledge, Prof. Guberina's team is the only group of researchers who have attacked this ideal of the equipment manufacturers. Is the flat curve response really the ideal in favoring language learning? Doesn't the reconditionment of the learner's ear demand a filtering of certain high output frequencies in the mother tongue, frequencies which are either not used or of very little value in the second language, and a favoring of the characteristic frequencies of the new system, frequencies which are very often idle in the mother tongue? Wouldn't we reduce to a minimum phonetic interferences of the mother tongue if we reeducated the student's ear to recognize such and such a sound in the language to be mastered by starting from characteristic accoustical signals of the sound, signals masked when they arrive at the ear by other signals which have a different output in the system of the mother tongue? Our colleagues who teach deaf and dumb people could teach us an awful lot of things if it weren't for that harmful isolation between teachers which is such a special characteristic of our profession. It is our profound conviction that, as long as we will not have resolved this problem of re-educating the student's ear in the second language, delayed audio-evaluation will have very little real worth.

However, since the big law of learning is motivation and that one of the most important factors in motivation is variety, we think that some audio active practice and some audio-evaluative work must be given in wise doses in order to keep in our language laboratory sessions, that operational diversity which makes each one of them a sort of adventure where uniformity and boredom are banished.

That is to say, an audio-active broadcast type lab with a certain number of audio-evaluative positions should be favored over the standardised much more expensive so-called "complete lab"... This set up might have less glamour; what really matters is the effectiveness and adequacy of the tool to the job.

Lucidity in the use of the languague lab is a matter of technological insight. It is of prime importance, for a keen utilisation of the language lab, to set forth clearly, the rationale for the type of technical installation one is using. Only then can be hope to really be the master that has dominion over the tool. Of course, lucidity in the use of the language lab is also a matter of pedagogical sagacity. Alas, even in America where the massive implantation of language labs in high schools has become a normal thing, we still hear teachers and administrators saying: "Now that we have a language lab, what should or could we do with it?" We call ourselves educators and yet we don't hesitate to put the cart before the horse.

Asking what can be done with a language lab is really a false question. The real question is: What can the language lab do better than the professor alone?

In a high school, it is not exaggerated to set four general aims to the use of language lab. First, oral training in the second language; second, knowledge of this language; third, a deeper knowledge of the student's native tongue and fourth, a general background knowledge of the culture of the other group. To these, we can add a fifth aim for the teachers: research.

The first and main target to achieve with a language laboratory in a secondary school and everywhere else is active training in the language. An ambitious and often embarassing aim! Does that mean written language or oral language? As far as we are concerned, the lab can be used as well for written language as for oral language. Learning the written language through the aid of the language lab is a direction rich in possibilities that no one has ever questioned but, we might as well admit it, we have neither the time nor the room; why mobilize our poor resources for that task? Traditionally the

teacher has always done a pretty good job in that domain. That's what we reproach him for: he's done a pretty good job only in that domain. But it's a domain that has many tools at the disposition of the student and professor alike, tools for efficient work such as the typewriter (a forgotten technique of second language learning) and the teaching machines. Let's therefore keep the language lab exclusively for spoken language learning and make this the specific direction in which we are going to work in the lab.

But what, in fact, does training in the oral language mean? Three things: improvement of auditory comprehension in the second language; improvement of the students' non-spontaneous expression. The language laboratory can achieve much in audio comprehension by the use of audio-visual exercises, by the presentation and repetition of contextual semantic forms, by going to listening drills with questions and answers, memorization exercises, reading excerpts, even by using translation and interpretation exercises. The laboratory can use everything (commercial recordings on records or tapes, school programs, copies and playbacks of radio and television programs, of film sound tracks, etc...). The language lab is an extremely flexible and useful tool for developing a passive mastery of the second language.

Improvements of oral expression is as well served by the language laboratory. Students can do a multiplicity of exercises and are prompted to speak constantly, the opposite of the classroom situation where each student has only a few seconds per period to practice to speak. However, because in the laboratory the student must always be given the correction of the linguistic problem he has just tried to solve (principle of immediate reinforcement), the lab is not at all useful in the improvement of the spontaneous expression. Many poetry professors and speech teachers have recommended the utilization of the tape recorder to practice free public speaking! It is true that delayed listening of a recording can aid us to improve our elocution, but this practice is not systematic. There is nothing didactic in this very expensive way of working. This is learning by trial and error which is not economical at all. It's a luxury that can be permitted in private if one could afford a tape recorder (and in this case, a monaural recorder would be adequate whereas our laboratories are equipped with units much more expensive that have stereo double channel). It is a waste of time and material that cannot be afforded in a school where thousands of students are going to spend, as a strict minimum, one hour and a half per week of practice. We have 30, 60, may be 100 student booths at our disposal; we have to use them to the maximum. Free expression is best practiced in small conversational groups, with a monitor whose mother tongue is the one being studied.

Let's take up this aim under another angle. Language learning takes in three types of behavioral habits: semantic habits, intellectual habits, perceptual and motor habits. These neuro-perceptual/motor habits are the ones which govern voiced realization of our messages as well as their written realization. However, we are not concerned here about written practice in a language laboratory situation. We should then try and develop the control of the audio system control which is passive and active at the same time. Whether you agree with Morton or Marty who both, although in differing degrees, claim that the mastery of the sound system should preceed the learning of structures and meanings of sentences, or whether you are on the side of the structural-global theories of the Zagreb-Saint-Cloud School, which are the bases of audio-visual courses like VIF; whether you are a partisan of the theories of learning as an analytical phenomenon or as a syncretic or synthetic phenomenon; whether you are a structuralist or a contextualist; there isn't the slightest doubt that we should teach our students to both recognize all the sounds of the new system (through auditive exercises and discrimination drills) and to reproduce all of them as correctly as possible (through repetition drills and anticipation exercises which structure them in the narrow unity of the discourse, i.e. the word, as well as in the wide unity of expression, i.e. the sentence). The opposition which separates these two camps is one, in fact, of differently established priorities. Whether you like it or not, each teacher has to clearly establish his position before taking his students into the lab. Would he like for his students the most possible correct perceptival-motor behavior in a limited sphere, or is he looking for the capacity of an effective and fluent communication, even at the price of a temporarily accepted mistakes, the student continually applying himself to successive approximations, closer and closer to the correct phonetic form, until there is finally established in him a behavioral pattern comparable to that of native speakers of the language? I don't think there is a ready-made answer to that question that will fit all situations. It's up to each of us to find his own answer, while taking into account the situation in which he is working. According to the attitude chosen the methodology will vary in class and in lab.

Intellectual habits are also called organizational skills. These are structural automatisms: catenation of sounds in the nucleus of the word, sequential word organisation in the syntaxical-morphological sentence chain. The practice of these automatisms (grammatical, if you wish) which was very difficult to insure in the classroom with traditional methods, and which was most often pushed into homework to be done outside of class, this is what the lab can do with an incontestable superiority over practice with a master tutor. A whole arsenal of structural exercises and pattern drills can be put into use in the lab. Here are some types of exercises that are particularly suitable to a language laboratory situation. Listening drills: immersion, discrimination, audio-comprehension.

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Repetition drills: imitation, memorization, songs and plays. Anticipation drills: substitution, modification; transformation, contraction, prefixation, inclusion, substraction, execution, invention, expansion; composition, description, narration, reaction, question, and answer; reading; translation and interpretation.

Whatever the theories might be, whether the learning process is considered by the teacher to be a problem of conditionning, of knowledge or of case solving, the language lab lends itself to a thousand and one kinds of practical exercises limited only by the teacher's ingenuity to develop in his students structural behavioral patterns of communication in the second language. Even further, the teacher does not always have to choose between the theories of Morton who would implant perceptival-motor mechanisms in his students before the intellectual mechanisms, and those of CREDIF who would, on the contrary, implant semantic mechanisms before structural behavior patterns, since a great number of structural exercises and pattern drills can embody very easily both types of habits. Certainly all the phonemes are presented in one fell swoop but it is possible to stagger the arrival of certain sounds which are difficult to handle and focus our efforts on such and such a sound at each moment in our grammatical progression. We can even, at the price of a patient application, get to the point of making these structural exercises just right for developing semantic habits as well, by contextualizing them, placing each sentence-problem in a mini-situation. I would even make of this a rule of thumb: avoid as far as possible the practice of grammatical mechanisms outside of any frame of reference to a real context. I agree that this is difficult to follow, but a little imagination and lots of time will help us to find for each case practiced the essential setting for an authentic behavior in verbal communication. Thus, instead of instructing our students, as is usually the case, to "put the following verbs into the imperative", why not propose the following practice outline with the help of an example:

Stimulus: *Your friend smokes a whole package of cigarettes every day.*
Response: *Don't smoke that much.*
S: *Paul is overweight, he eats too much.*
R: *Don't eat that much.*
S: *It's eleven a.m.; you have been sleeping all morning.*
R: *Don't sleep that much.*

Instead of asking them to "put sentences into the interrogative", why not propose the following game:

Stimulus: *Ask the children if they like milk*
Response: *Do you like milk?*
S: *Paul is still at the table but he's not drinking his coffee. Ask him if he's through with his meal.*
R: *Are you through with your meal?*

Semantic habits, as we have let it be understood, are those which must be deployed to decipher what has been coded by someone else or to encode what we ourselves think and feel. Instead of bearing on the "how to say it", which is property of the mechanisms just described, these bear on the "what to say" and the "when to say it". Evidently, the language lab cannot realistically propose teaching its students how to think. It is not a part of the lab's aims to help its students to develop the "what to say". But if we take each linguistic problem proposed to our students and make it into a realistic situation where he has to question himself not only on the forms and structures to be used, but also on his own reactions to the sentence he has just heard; if we demand the widest possible behavior patterns to get at the correct solution for each proposed linguistic problem; then, there is a good chance that our exercises are neither simply gymnastic exercises, nor a fastidious practice session in scales, arpeggios and chords, but a real learning session in communicating in the second language. Even though the claim that there is a transfer of learning from the mother tongue to the second language in the domain of semantics needs to be partly corrected by the proofs furnished us by comparative stylistics, it is non-the-less true that once our students are well-armed from the point of view of phonology and grammar, non-spontaneous oral expression (or, if one so desires, semi-directed oral expression) will be greatly facilitated for them and they will have gone quite a distance on the path of free expression in the second language. We must frankly admit that it would be illusory, at least in the present state of our own experiments, to expect anything more from a language lab. Spontaneous or free speech has to do with real communication between real persons. If there is really communication on the telephone, it is because all the necessary conditions for an authentic dialogue between two people speaking the same idiom are met. The day when it will be possible to link each student position to a computer whose magnetic memory has stored up all human knowledge, all human reactions and reflexes, all the structures and formal variants of the language being taught, in short: all the behaviorial patterns of verbal communication in that language, then and only then can the language lab include in its aims the learning of spontaneous oral expression in the second language. Until then, it must be admitted that the language lab slows down considerably when we ask it to develop the semantic mechanisms pertaining to the mastery of the second language. The language lab is not the ideal place to effectively practice authentic communication. This leads us to conclude that lab work is simply a part and not the whole of linguistic training. If the linguistic workshop, however, does well that which it can do, then the teacher will be so much freer to devote himself exclusively, and with much more profit, to that which be alone can do. That is to say, he will take over once again the function of educating and will leave to the machine the mechanical repetitive functions that it can do as well as - if not better than - he.

The second aim we should propose to a language laboratory in a high school and in a college seems to be the knowledge of the second language. By knowledge we mean not only a practical mastery of the language but also a certain intuition of the psycho-mechanism that rules the expression in this second language. As a matter of fact, at the same time as a student practices, in the language, to understand and to speak the language, he becomes aware of the distinctions and the resemblances between the written and the spoken language. An awareness that is not precise at first, but which little by little, as long as our lab exercises are well done, will become more and more acute in relation to the scholastic level of the student. Let's not hide our heads in the sand: modern pedagogy has banished from our foreign language classrooms the grammatical explanations related to the language to be learned. We don't want to have this formal teaching of grammar back, but we don't see why we should insult the intelligence of our students, who have achieved a fairly high level of schooling, by refusing them any understanding of the mechanisms of the language being learned. When it is necessary to form rapidly and well bilingual people on an industrial basis the opposite tactique becomes a gross mistake because it deprives us of strong allies. In any case, the systematisation necessitated by the very practice of linguistic facts in the lab with the aim of developing mechanisms can only lead the student to make inductions that will serve him as guidelines. We have to insure that we don't put him on the wrong track, that we don't provoke hasty generalizations, that we don't leave him floundering in examples that serve no purpose at all. Let's say that we must be sure not to limit his explorations to the horizontal chain of communication; we must also, by an in-depth study of structure, make him aware of the breaking point (formal or semantic) of such and such a formal mold (vertical exploration). Stretch drills are here particularly useful and comply quite well with the language lab situation.

The third aim we would propose for the laboratory is the exploitation of a by-product: a deeper understanding of the native tongue. Training in a second language according to the lines we have sketched here would make our students face the oral problems in their own mother language. They would be led to reflect on the two systems of expression to make comparisons which can only be fruitful if their linguistic awareness has been well orientated by our drills and exercises. It would be a veritable crime if our language labs served to assimilate the students who have been given to us, instead of forming authentic adults who have enriched their faculty of expression with a true bilingualism or multi-lingualism.

The fourth objective is an opening on the culture (in the anthropological sense) of the other group. This will be obtained in the laboratory in so far as we weave into our structural exercises and pattern drills the image of the socio-cultural reality which generates and is generated by the second language

being studied. To this end, the contextualisation of our exercises should be the object of a very special attention. We should have our students work neither on transformations which are theoretically possible but rejected by usage, nor on situations and contexts which reek with prejudices or folklore. If learning a second language should not simply lead to verbalism but to an authentic humanism, we have to begin to substantiate our teaching right in the very first lessons. But beware of the common mistake! With beginners, it is through the linguistic learning process itself that we should do it and not through parallel courses which utilize the first tongue or even that language. For more advanced students, the passive laboratory shows its worth (relatively low investment and optimum returns) for listening to literary, sportive, and scientific texts (according to students' interest) as well as the retransmission of lectures or addresses pertaining to history, geography, sociology,...

Of these four aims, the first is evidently the most important; the other three being subordinated to it. It is probably the only one to be formally used in grade schools. As for the fifth aim to which we have alluded: research, it imposes itself through professional conscienciousness, no matter at what level we are working. Indeed, several times in the course of these remarks we have spoken of open debate, of unanswered questions, of opposing camps... Much research has to be done in the field of second language teaching and especially of instrumental didactics. The pedagogy of the language laboratory is still to be invented, we stated at the beginning of this paper. If each teacher who works with this tool with which modern technology has favoured us, would take the trouble to think about how it acts, many problems would be eliminated, many things would rapidly be cleared up and we could then proceed with a firmer step. The language laboratory, even more than the classroom, is the ideal place to observe students in training. How much information the attentive teacher can glean, not only about the subject being taught but about the learning activity of the students! One thing is certain, if we want our language laboratory practice to be really efficacious, each teacher has to interrogate himself before, during, and after every laboratory session on the value of the exercises he has presented to his students. Is the format of the exercise the most appropriate to the didactic unit we want to be mastered by? Is the presentation adequate to the aims proposed? Did the students' understanding progress at the same rate as their "neuro-psycho-physiological behavior"?...

What to do with a language lab? Many things. And we have not even touched the important point of testing. The evaluation phase is a necessary part in the process called "second language lesson". Here again the language lab can do a marvellous job, being efficacious and much more objective than any human examiner.

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If we want our exploitation of the lab to be a lucid one, we shouldn't hide either the rich possibilities or the serious limitations of this tool. Let it not be only a status symbol. The tool is never better than the hand of the operator that uses it. It has been said over and over: Behind the tape, the teacher. We should not overestimate nor underestimate this boon of modern technology. The language lab is neither of vital necessity nor a luxury, but one of the most powerful instruments in the service of the master craftsman. The more docile it is in knowing hands, the more effective it is. The language lab is an electro-technical monster to be domesticated.